Amendments to the Drawings:

The attached drawing sheets (each labeled "Replacement Sheet" within the margin header, as required) incorporate the following changes:

Figs. 3-5, 7 and 11 are designated by the legend "Prior Art".

REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

CONCURRENT REQUEST FOR CONTINUED EXAMINATION (RCE)

Submitted concurrently herewith is a Request for Continued Examination (RCE) transmittal. In the event that the RCE transmittal is not filed herewith, then this paper should be taken as a request for the filing of an RCE.

RCE FILED TO AVOID PROSECUTION DELAYS

In view of the significant features/limitations of the amended and/or added claims being inappropriate (i.e., deniable) for entry after final rejection in that such would require significant further search and/or consideration, the present RCE was filed to avoid Advisory Action delay and to gain immediate entry/consideration of such feature/limitations. In view of the significant features/limitations of the amended and/or added claims, it is respectfully submitted that it would NOT BE PROPER to make a FIRST ACTION FINAL within the present RCE.

FIGS 3-5, 7 AND 11 DRAWING CHANGES

In view of drawing objections issued in at least one related application, submitted herewith are attached FIGS. 3-5, 7 and 11 drawing sheets (each labeled "Replacement Sheet" within the margin header, as required) incorporating "Prior Art" labeling changes as indicated within the "AMENDMENTS TO THE DRAWINGS" section of this paper. Acknowledgment of receipt, and approval, of the drawing changes and Replacement Sheets, are respectfully requested.

PENDING CLAIMS

Claims 23-26 was pending, under consideration and subjected to examination. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is presently interested. At entry of this paper, Claim 23-26 will be pending for further consideration and examination in the application. It is respectfully submitted that the present amendment of the claims does not add new matter to the application.

REJECTION(S) UNDER 35 USC '103

The 35 USC '103 rejection of claims 23-26 is respectfully traversed. However, such rejection has been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims. That is, insofar as any such

rejection applies to Applicant's presently-clarified claims, Applicant respectfully submits the following.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, regarding any descriptions and rebuttal arguments concerning Applicant's invention and/or the applied prior art as included herein, yet found to be corrective over prior descriptions and rebuttal arguments, such corrective descriptions and rebuttal arguments should be considered to supersede prior descriptions and rebuttal arguments. Still further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

Regarding the "AAPA (Applicants Admitted Prior Art)", Rodruquez et al., Fukuhara et al. and "Well Known Prior Art (Official Notice)" combination rejection, Applicant respectfully submits the following.

Regarding the present rejection, it is respectfully submitted that the Applicant is improperly making use of an alleged "Applicant's Admitted Prior Art (AAPA)" and "Well Known Prior Art (Official Notice)". **Strong traversal is appropriate.**

Regarding the alleged "**Applicant's Admitted Prior Art (AAPA)**" described in paragraph [0010] of this application's publication, it is respectfully noted that such paragraph **only discusses a general background arrangement**. Paragraph [0010] says nothing about any "...moving picture decoding method having a prediction mode in which prediction mode motion vector information of a current block in a current frame is not transmitted from an encoding side" as explicitly claimed within

Applicant's claims. In short, it is respectfully submitted that paragraph "5" beginning on page 3, concerning AAPA discussions, is only a word-for-word regurgitation of paragraph [0010] inserted into the middle of a word-for-word regurgitation of Applicant's claim 23. That is, it is respectfully submitted that such paragraph "5" no substantive discussions or reasoning (beyond the word-for-word regurgitation) as to why or how paragraph [0010] teaches Applicant's claim 23 features/limitations. Applicant respectfully requests that the Examiner provide more substantive discussions or reasoning regarding, or else the Examiner should withdraw such unsupported allegations.

Traversal regarding **Rodriquez et al.** is as follows. In Applicant's present invention, a moving picture decoding method **does not perform transmission of a motion vector against a current block**. For example, in claims 23 and 24, such feature can be read from the phrase "**in which prediction mode motion vector information of a current block in a current frame is not transmitted from an encoding side**". Similarly, in claims 25 and 26, one can read the phrase "**motion-vector-less prediction mode having a motion-vector-less block**". Further, in Applicant's present invention, Applicant's claimed method determines the motion vector against the current block **based on whether adjacent blocks adjacent to the current block, have a motion vector.**

In contrast, Rodriquez (U.S. 6195389) discloses a high speed search which obtains a motion vector by squeezing a searching area for block matching and executing high speed block matching with use of a motion vector for an adjacent block which is adjacent to the current block. That is, the method of Rodriquez searches for a similar pixel by block matching. However, Rodriquez teaches neither

any method without transmission of the motion vector, nor any determination standard of whether adjacent blocks have a motion vector.

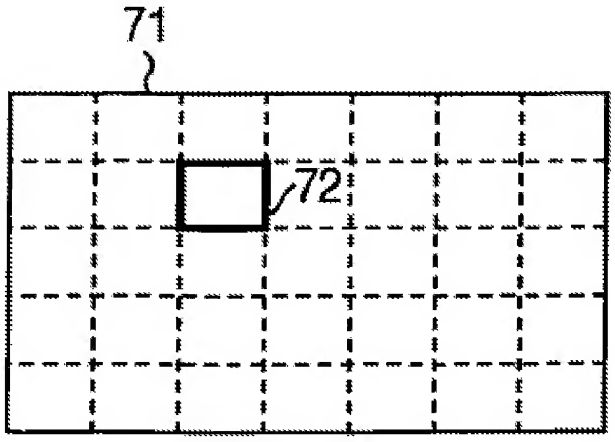
Fukuhara et al. does nothing to cure the major deficiencies mention above with respect to the AAPA and Rodriquez et al. art.

Finally, in an attempt to cure further deficiencies whether "...adjacent blocks are decoded earlier than the current block", the Office Action rejection indicates, "...Official Notice is taken that both the advantage and concept of providing the limitations as claimed are notoriously well known and expected in the art ...[and therefore it] would have been obvious to one of ordinary skill in the art to incorporate with AAPA (modified by Rodriquez and Fukuhara)." With regard to such parts of the Office Action comments set forth in support of the rejection(s), which assert that certain ones of Applicant's claim features/limitations were "well-known in the art", traversal is appropriate. Regarding the details of such traversal, attention is directed to the **SPECIFIC TRAVERSAL OF "OFFICIAL NOTICE"** section set forth near the end of this paper. In short, Applicant respectfully requests that the Examiner cite a valid reference supporting the "Official Notice", as required by MPEP 2144.03, or alternative, the Examiner should withdraw the unsupported "Official Notice".

Regarding the Snook et al., Fukuhara et al. and Zaccarin et al. combination rejection, Applicant respectfully submits the following.

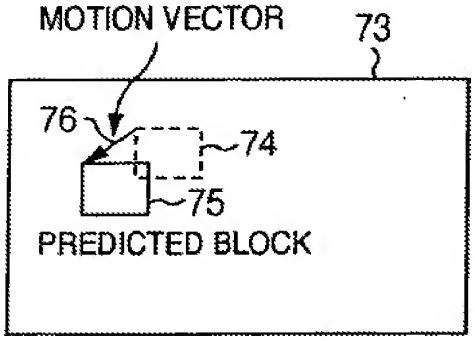
Applicant's disclosed and claimed invention concerns the **decoding** of images. One goal with decoding is to use least amount of image information as possible, yet still maintain reasonable imaging results.

As background, Applicant's invention is applicable to "blocks" (or "macroblocks"). That is, a larger frame **71** (see sketch) may be divided up into a plurality of blocks **72**.



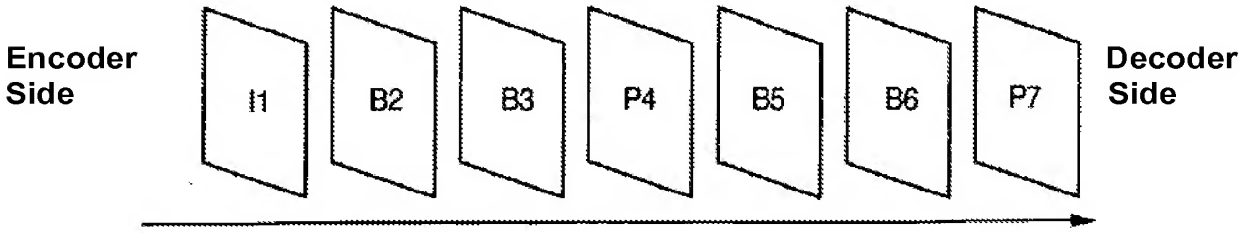
CURRENT FRAME

In conducting an encoding operation, each block may be processed at an **encoder** end, e.g., to derive various block information, e.g., a "**motion vector**", "residual information", etc.

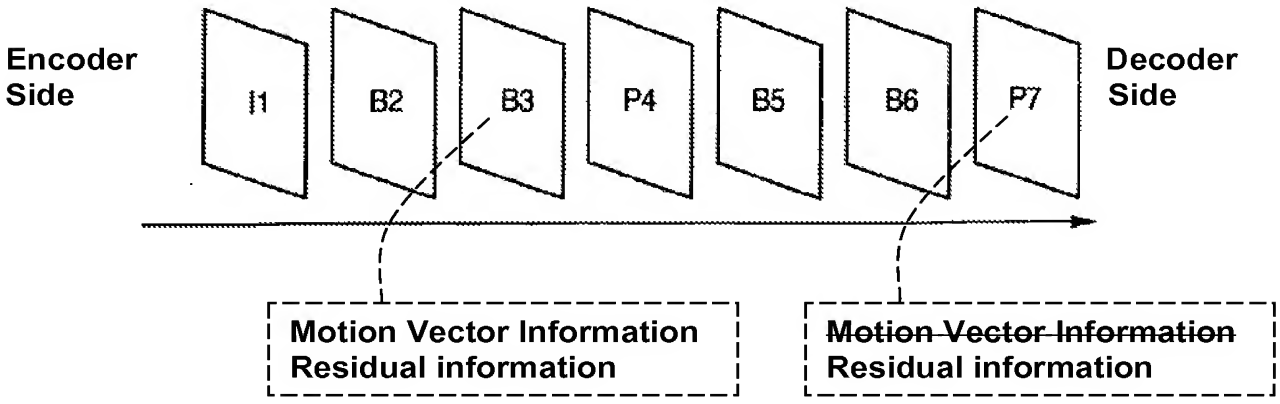


PREVIOUS FRAME

One can then transmit the block information (e.g., of "I", "B" and "P" blocks of MPEG4) from encoder side to decoder side (see sketch). That is, each block may be transmitted using a differing mode (Forward Prediction; Backwards Prediction; Bi-Directional Prediction; Direct Mode Prediction)



Respective ones of the transmitted blocks may include "motion vector" information, "residual information", etc. (see the example **B3** block in sketch below). Blocks transmitted with "**motion vector**" information are **easy to decode** at decoder side **because decoder is given the "motion vector"**.



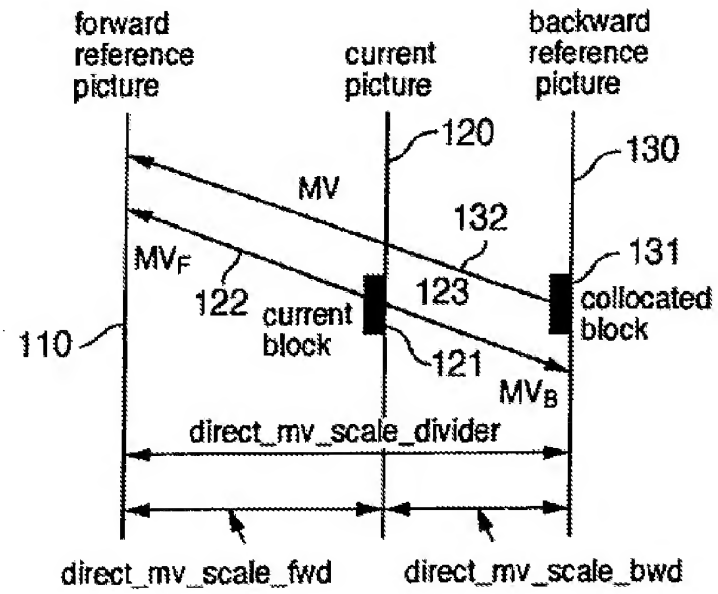
In contrast, other ones of **"motion-vector-less" (MVL)** blocks **do NOT include the "motion vector" information** (see the example P7 block in sketch above). These blocks concern "**a prediction mode without motion vector**

decoding" (or **"Direct Mode Prediction" mode**, or a **"motion-vector-less prediction mode"**). These MVL blocks are **HARDER to decode** at decoder side **because decoder is NOT given the "motion vector"**.

Applicant's present invention concerns an approach on **how to decode these MVL blocks on the decoder side**.

As further background, one approach to decode these MVL blocks on the decoder side concerns a **"Conventional Direct Mode" approach**. Such approach uses a motion vector determined for a "**collocated block**" (see Applicant's FIG. 9 reproduced herewith for convenience) of a **backward reference picture (or frame)**, to interpolate a motion vector for a current MVL block existing within a current picture (or fame). An understanding of most details of such approach is not important regarding the present discussions. However, it is important to realize that the "**collocated block**" (and its motion vector) exists with respect to **a different picture frame** in comparison to **a "current block" which exists within a "current picture" frame**.

FIG.9



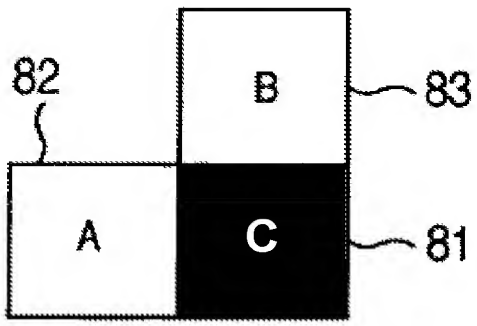
MV_F =direct_mv_scale_fwd • MV/direct_mv_scale_divider

MV_B =direct_mv_scale_bwd • MV/direct_mv_scale_divider

The above **"Conventional Direct Mode" approach** gives good decoding results **MOST OF THE TIME**, but there **are situations where it does not give good results**. Applicant's invention provides an alternative approach which may be used.

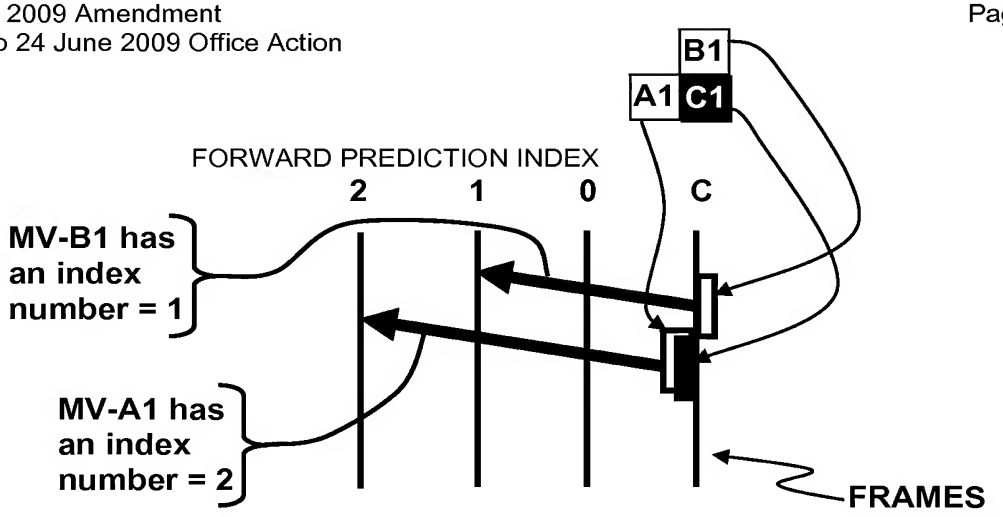
That is, **Applicant's present invention** concerns another (i.e., differing) **"New Direct Mode" approach**. As one distinguishing feature, Applicant's present invention looks to **OTHER BLOCKS** from the **SAME PICTURE FRAME** to determine the **"motion vector"** information to be used for decoding of the "motion-vector-less" (MVL) block.

FIG.14



In turning to an example, if a **current** "motion-vector-less" (MVL) block is given as block **C** (see **FIG. 14** portion reproduced below for convenience), one may consider an adjacent left block **A** and an adjacent upper block **B**, and any motion vector information thereof.

Motion vector information (of adjacent blocks within a same frame) which Applicant's present invention may consider (as one non-limiting example), is an **"index number" of forward reference frames to which adjacent blocks' vector information refers**. A drawing sketch is useful in an understanding.



More particularly, the above sketch shows a current block **C1** (in plan view and in side view) with two adjacent blocks **A1, B1** within **a same current frame "C"**, and also sequential "index numbers" (**0, 1, 2, ...**) for neighboring forward-prediction frames are assigned sequentially and extending to the left (i.e., in the forward direction). The sketch further shows that a motion vector **MV-B1** extending from adjacent block **B1** has an index number of "**1**" (i.e., points to a forward frame having an index number of "**1**"), and that a motion vector **MV-B2** extending from adjacent block **A1** has an index number of "**2**" (i.e., points to a forward frame having an index number of "**2**"). In such instance, Applicant's invention may, in a **first selection** option, **select the pointed-to forward reference frame having a SMALLEST index number** (**FIG. 16**, blocks **621** and **623**), i.e., **would select the forward frame "1" as a forward reference frame for the current block C1**. As a **second selection** option, **in the event that neither of the adjacent blocks A1 and B1 uses (i.e., points to) a forward reference frame**, Applicant's invention **may select the forward reference frame having the index 0** (**FIG. 16**, blocks **622** and **624**) as a forward reference frame for the current block C1.

That is, Applicant's disclosed and claimed invention (using independent claim 23 as an example) has an arrangement "**determining motion vector information** to be used for the **current block in the prediction mode**, **based on whether predetermined adjacent blocks adjacent to the current block, have a motion vector**, wherein all the predetermined adjacent blocks and the current block belong to the current frame and the predetermined adjacent blocks are decoded earlier than the current block".

Turning attention to rebuttal of the previously-applied art, **Snook** does not (at minimum) teach or suggest any type of arrangement for "**determining motion vector information** to be used for the **current block in the prediction mode**, **based on whether adjacent blocks adjacent to the current block, have a motion vector**, wherein **both the adjacent blocks and the current block belong to the current frame**". That is, Snook's arrangement looks at neighboring frames, not a current frame. For example, Snook's **FIG. 2** (reproduced herewith for convenience) shows reference being made to a past reference frame or picture **P0** (see arrow extending from current frame **P1**, to past frame **P0**), or being made to future reference frame or picture P1 (see arrow extending from current frame **P1**, to future frame

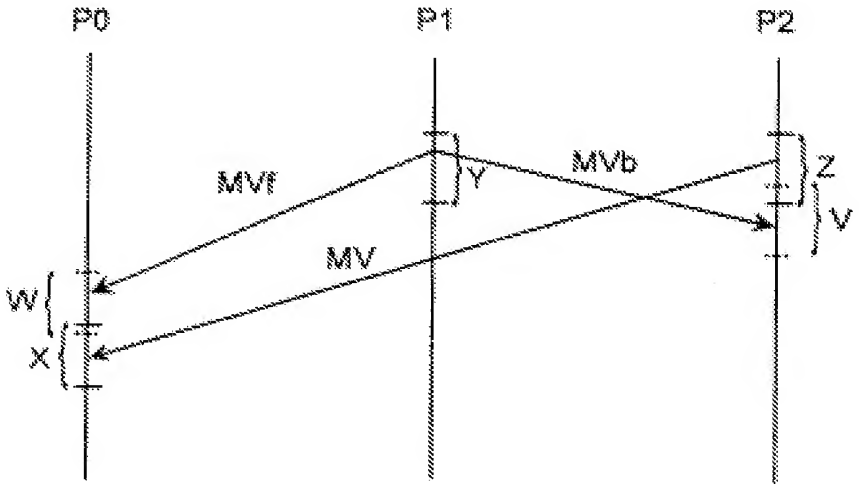


FIG.2

P2). In short, it is clear that Snook's arrangement relates to the above-discussed **FIG. 9 "Conventional Direct Mode" approach** which uses a motion vector of a **backward reference picture (or frame) and/or a forward reference picture (or frame)**, to interpolate a motion vector for a current MVL block existing within a current picture (or fame). Thus, if anything, Snook **TEACHES AWAY** from Applicant's invention which references blocks WITHIN A SAME (I.E., COMMON) FRAME.

Turning finally to **Fukuhara et al.** and **Zaccarin et al.**, neither reference cures the major deficiencies mentioned above with respect to the above-discussed primary Snook reference. **In particular**, it is respectfully submitted that the Examiner has no explained how Fukuhara et al. and Zaccarin et al. cure Snooks major deficiency of TEACHING AWAY from Applicant's invention. Accordingly, it is respectfully submitted that the applied and/or known references (whether taken individually, or in combination) would not have disclosed or suggested Applicant's claimed invention.

No other reference cures the major deficiencies mentioned above with respect to the above-discussed reference(s). Accordingly, it is respectfully submitted that the previously-applied and/or known references (whether taken individually, or in combination) would not have disclosed or suggested Applicant's claimed invention.

As a result of all of the foregoing, it is respectfully submitted that the applied art (taken alone and in the Office Action combinations) would not support a '103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '103 rejection, and express written allowance of all of the '103 rejected claims, are respectfully requested.

SPECIFIC TRAVERSAL OF "OFFICIAL NOTICE"

Office Action comments in support of the art rejection(s) assert that certain claimed features/limitations were "well known in the art", i.e., without providing supportive art references for such assertion. With regard to such assertion of apparent judicial (i.e., Examiner) notice of common knowledge or well-known prior art, attention is directed to MPEP 2144.03 which states, "If the applicant traverses such an assertion the examiner should cite a reference in support of his or her position." Accordingly, in view of Applicant's traversal in this regard, and in accordance with the provisions of MPEP 2144.03, Applicant respectfully requests that a documentary proof be cited to explicitly show that such features/limitations were explicitly known in the art, or alternatively, Applicant respectfully requests withdrawal of all rejections based upon such unsupported judicial notice.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or

disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

This Amendment is being submitted concurrently with the filing of a Request for Continued Examination (RCE) and does not present any changes which would require further search, consideration or fees. Entry and approval of the minor corrections made herein are respectfully requested.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR '1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 500.44249X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

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